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Michael L. Case

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EXAMINER

LUONG, ALAN H

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2427

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/670,064	Applicant(s) CASE, MICHAEL L.	
	Examiner ALAN LUONG	Art Unit 2427	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims **13-17** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim **13** sets forth a “**machine readable storage medium having stored data representing instructions.**” However, the specification does not explicitly define machine- readable storage media (**Para. 48**). The United States Patent and Trademark Office (USPTO) is obliged to give claims their broadest reasonable interpretation consistent with the specification during proceedings before the USPTO. *See In re Zletz*, 893 F.2d 319 (Fed. Cir. 1989) (during patent examination the pending claims must be interpreted as broadly as their terms reasonably allow). The broadest reasonable interpretation of a claim drawn to a **computer readable storage media** (also called machine readable medium and other such variations) typically covers forms of non-transitory tangible media and transitory propagating signals *per se* in view of the ordinary and customary meaning of computer readable media, particularly when the specification is absent an explicit definition or is silent. *See* MPEP 2111.01. When the broadest reasonable interpretation of a claim covers a signal *per se*, the claim must be rejected under 35 U.S.C. § 101 as covering non-statutory subject matter. *See In re Nuijten*, 500 F.3d 1346, 1356-57 (Fed. Cir. 2007) (transitory embodiments are not directed to statutory subject matter) and *Interim*

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Examination Instructions for Evaluating Subject Matter Eligibility Under 35 U.S.C. § 101, Aug. 24, 2009; p. 2.

Response to Arguments

2. Applicant's arguments filed 02/24/2010 have been fully considered but they are not persuasive.

Applicant respectfully submits that Klauss reference fail to teach limitations of claim 1 because "The CAI is not commands to the tuners, but subscription data used by the CA Verifier to restrict access to some of the broadcasted channels. Further, the CAI is not a command, the types are not protocols, and they are not received at control interfaces but at the RF interfaces. There is nothing in the reference to support the Examiner's position that these are commands. (Remark, page 10)

Examiner interpreted the claim limitation based on Fig. 4 of Klauss shows **a first tuner [410A] having an external control interface** (i.e. Verifier CAV [408]) where couples with **an external agent CAM [406]) (Klauss, ¶0050 to ¶0055); the first tuner [410A] receives** Condition Access Information (CAI) from Transponders as **commands in a first protocol specific to the first tuner** (i.e. only the tuner [410A] receiving CAI type A) **at the external control interface** (i.e. CAI is passed to CAM [406] for decryption) **(Fig. 5, ¶0064-¶0065);** because CAV [408] receives information from the tuners regarding which satellite/transponder/channel each tuner is tuned to and to supply **commands** to the tuners 410; (**¶0053**) and the verifier CAV [408], microprocessor 414 or other element of the IRD 132 compiles the CAI statistics that (by **protocols**) allow the

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tuner that most often receives type A CAI to be identified. (**¶0067**). The Condition Access packet (CAP) contains CAI as control information which is used by the microprocessor to control the tuners (**¶0063**).. Therefore, the above reference supports the Examiner's position that these are commands

In addition, Applicant respectfully points out the Examiner appears to suggest that the Type A and S CAI are commands received by the tuners from the CAM (smart card) 406. However, paragraph 72 is clear that the CAI is received from the satellites and sent from the tuners to the CAM. (Remark, page 10-11)

Examiner clarifies in new rejection of claim 1 based on the amended claim; Fig. 4 of Klauss shows **a first tuner [410A] having an external control interface** (i.e. Verifier CAV [408]) where couples with **an external agent CAM [406]** receives information from the tuners regarding which satellite/transponder/channel each tuner is tuned to and to supply **commands** to the tuners 410; (**¶0053**)

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims **1- 5, 8-10, 13-15 and 18-21** are rejected under 35 U.S.C. 102(e) as being anticipated by US Publication No. **2004/0102155** by **Klauss et al.**

Regarding to claim 1: Fig. 4 of Klauss illustrates a receiver IRD 132 as **an apparatus comprising:**

Klauss teaches **a first tuner [410A] to receive modulated video signals** (Fig. 4 shows a Receiver [132] includes **a first tuner [410A]** receives the data packets from the video distribution system and provide the packets to the TDM 412 where unencrypts the media programs to provide to the source decoder 416 which decodes the media program data **to provide demodulated video signals (Klauss, ¶0056 to ¶0058); the first tuner having an external control interface** (i.e. CAV [408] where is coupled to external agent CAM [406]) **to receive commands in a first protocol specific to the first tuner at the external control interface** (i.e. CAV [408] receives information regarding the tuners 410 via the microprocessor and memory 414 (which controls the tuners and receives information from them) and provides commands to the tuners via the microprocessor and memory 414 as well.), **(Klauss, ¶0052 to ¶0054 and Fig. 5 ¶0064-¶0065, ¶0067); and**

Klauss teaches **a second tuner [410B] to receive modulated video signals** (Fig. 4 shows a Receiver [132] includes **a second tuner [410B]** receives the data packets from the video distribution system and provide the packets to the TDM 412 where unencrypts the media programs to provide to the source decoder 416 which decodes the media program data **to provide demodulated video signals; (Klauss, ¶0056 to ¶0058); the second tuner having an external control interface** (i.e. CAV [408] where is coupled

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to external agent CAM [406]) **to receive commands in a second protocol different from the first protocol** (i.e. CAV [408] receives information regarding the tuners 410 via the microprocessor and memory 414 (which controls the tuners and receives information from them) and provides commands to the tuners via the microprocessor and memory 414 as well.) **and specific to the second tuner at the external control interface** (Klauss, ¶0050 to ¶0058 and Fig. 5 ¶0064, ¶0067 and ¶0071)

a graphics controller (i.e. a microcontroller and associated memory 414) **to generate commands for controlling the first and second tuners** (the microprocessor and memory 414 controls the tuners and receives information from them) (Klauss, ¶0053), **the commands being generated in a third protocol** (i.e. subscriber 110 commands) **different from the first and second protocols.** (i.e. a user I/O device [420] couples to a microcontroller and associated memory 414 for accepting subscriber 110 commands.) (Klauss, ¶0055),.

a microcontroller coupled to the graphics controller (i.e. a microcontroller inside the microcontroller and associated memory [414]) **and to the external interfaces** (CAV [408]) **of the first and second tuners** (i.e. CAV [408] is coupled to MAM [411], TDM [412], Source [416], RAM [418] and external agent CAM [406],) **to receive the commands from the graphics controller in the third protocol** (i.e. a microcontroller and associated memory 414 receives user's command from user's I/O [420]) to identify a tuner to which each command is directed **to convert the commands from the third protocol to the protocol for the identified tuner**, (i.e. the microcontroller and memory 414 may be implemented via software instructions stored in the memory and performed

by the microcontroller 414 and the verifier 408 compile the CAI statistics that allow the tuner that most often receives type A CAI to be identified.) (**Klauss, ¶0054 and ¶0067**) and Fig. 5D illustrates steps to **transmit the converted commands to the respective identified tuner through the external control interface of the respective tuner.** (i.e. the CAI includes channel information identifying the channel transmitting the CAI. As previously described, this information can be in the header of the CAP. Using this information, the channel upon which the CAI was transmitted is identified, as shown in block 540. Then, a determination is made regarding which of the tuners 410 are tuned to the channel identified in block 540), (**Fig. 5C-D, Klauss, ¶0067 to ¶0072**)

Regarding to claim 2. The apparatus of Claim 1, FIG. 5B-C of Klauss depicts exemplary process steps that can be used to determine which tuner is designated to be the only tuner that will receive the type A CAI **wherein the tuner further generates command responses in the first protocol** (i.e. type A CAI) (**¶0067**) and **wherein the microcontroller receives the command responses, converts them to the third protocol** (i.e. microprocessor 414 or other element of the IRD 132 compiles the CAI statistics that allow the tuner that most often receives type A CAI to be identified) **and transmits the converted command responses to the graphics_controller** (i.e. the CAI includes channel information identifying the channel transmitting the CAI. As previously described, this information can be in the header of the CAP. Using this information, the channel upon which the CAI was transmitted is identified, as shown in block 540. Then, a determination is made regarding which of the tuners 410 are tuned to the channel identified in block 540 .The processor for performing the operations

defined in the software module may be stored in a CAV 408 dedicated memory coupled to a CAV 408 dedicated processor, or may be performed by the microcontroller and associated memory 414. Other elements, such as the CAM 406 and/or the microcontroller and memory 414 may perform some or all of the functions described in FIGS. 5A-5C.), **(Fig. 5C-D, Klauss, ¶0067 to ¶0072)**

Regarding to claim 3: The apparatus of Claim 1, Klauss further teaches a **third tuner** (i.e. tuner [410C] of tuners [410]) **to receive a modulated video signal (i.e. media programs are streamed to the IRD 132 in real time, and may include video, audio, or data services), the third tuner having an external interface** (i.e. CAV [408] is coupled to MAM [411], TDM [412], Source Decoder [416], RAM [418] and external agent CAM [406]) **to receive commands in a fourth protocol specific to the third tuner, (i.e. The Conditional Access Information (CAI) is received by a third tuner 410C of the plurality of tuners 410A-410N in the receiver 132. The CAI is then examined to determine whether the CAI is of a fourth type (type F) that is transmitted by a subset of the plurality of transponders 450-456; if the CAI is of the fourth type (type F), the channel information can be examined to determine which of the tuners are tuned to the identified channel, and the only CAIs from tuners that are tuned to the identified channel) (Klauss, ¶0050 to ¶0055 and Fig. 5 ¶0064, ¶0067 and ¶0071)**

and wherein the microcontroller receives external commands from the graphics controller for the third tuner in the fourth protocol (i.e. microcontroller and associated memory 414 receives another user's command from User's I/O [420]),

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converts them to the fourth protocol (i.e. microprocessor 414 or other element of the IRD 132 compiles the CAI statistics that allow the tuner that most often receives type F CAI to be identified) **and transmits them to the external interface of third tuner** (i.e. the CAI includes channel information identifying the channel transmitting the CAI. As previously described, this information can be in the header of the CAP. Using this information, the channel upon which the CAI was transmitted is identified, as shown in block 540. The processor for performing the operations defined in the software module may be stored in a CAV 408 dedicated memory coupled to a CAV 408 dedicated processor performed by microprocessor 414) **(Fig. 5C-D, Klauss, ¶0067 to ¶0072).**

Regarding to claim 4: The apparatus of Claim 1, referring to Fig. 4 of Klauss **wherein the tuner further comprises an input/output interface** (i.e. User I/O device [420] **to communicate data and control signals in the first protocol to external devices** (i.e. Source decoder [416] and TDM [412]) **and wherein the microcontroller [414] is coupled to the input/output interface [420] to convert data and control signals between the first protocol and the third protocol** (Klauss, ¶0055, ¶0058).

Regarding to claim 5: The apparatus of Claim 1, referring to Fig. 4 of Klauss wherein the graphics controller [114] is **a system processor coupled to the microprocessor to generate the commands in the first protocol to control the tuner** (the microprocessor and memory 414 controls the tuners and receives information from them)(Klauss, ¶0053) **and to control other functions of the apparatus.** (Klauss, ¶0072)

Regarding to claim 8: Similar the method of claim 1,

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Klauss teaches **generating commands in a third protocol** (i.e. subscriber 110 commands) **at a graphics controller** (i.e. a microcontroller and associated memory 414) **to control one of a first tuner** (i.e. 410 A) **and a second tuner** (i.e. 410 B); (**Klauss, ¶¶0053, ¶0055**),

receiving the generated commands at a microcontroller (i.e. a microcontroller inside the microcontroller and associated memory [414]) **from the graphics controller**; (**Klauss, ¶0054 and ¶0067**)

identifying a tuner to which the commands are directed; (i.e. the CAI includes channel information identifying the channel transmitting the CAI) (**Fig. 5C-D, Klauss, ¶0067 to ¶0072**)

determining a command protocol for the identified tuner as one of a first protocol and a second protocol, the first protocol corresponding to the first tuner and the second protocol corresponding to the second tuner; (**Fig. 5C-D, Klauss, ¶0067 to ¶0072**)

converting the received commands from the third protocol to the identified protocol; (**Klauss, ¶0054 and ¶0067**) and

transmitting the commands to the identified tuner through an external control interface of the tuner in the identified first or second protocol. (**Fig. 5C-D, Klauss, ¶0067 to ¶0072**)

Regarding to claim 9: The method in claim 9 has the same limitation in claim 2, so, claim 9 is rejected the same ground with claim 2

Regarding to claim 10: The method in claim 10 has the same limitation in claim 3, so, claim 10 is rejected the same ground with claim 3

Regarding to claim 13: With respect to the article claim 13, as discussed above since the apparatus disclosed by Klauss anticipated every structural element and its function required by apparatus in claim 1 and since this article in claim 13 merely repeats the same limitations of claim 1, claim 13 must also be anticipated by Klauss (see claim 1 rejection).

Regarding to claim 14: With respect to the article claim 14, as discussed above since the apparatus disclosed by Klauss anticipated every structural element and its function required by apparatus in claim 2 and since this article in claim 14 merely repeats the same features of claim 2, claim 14 must also be anticipated by Klauss (see claim 2 rejection).

Regarding to claim 15: With respect to the article claim 15, as discussed above since the apparatus disclosed by Klauss anticipated every structural element and its function required by apparatus in claim 3 and since this article in claim 15 merely repeats the same features of claim 3, claim 15 must also be anticipated by Klauss (see claim 3 rejection).

Regarding to claim 18: Fig. 4 of Klauss illustrates a video tuner [410] .

Herein:

a system processor (i.e. a microcontroller and memory 414).

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remote control interface from remote control (i.e. a user I/O device [420] for accepting subscriber 110 commands)

a tuner unit [410N] to receive wireless video signals modulated over a carrier frequency (i.e. The media programs may be transmitted by a plurality of satellites such as satellite 108A and 108B (hereinafter alternatively collectively referred to as satellite(s) 108), each of which typically includes a plurality of transponders 450-456), (Klauss, ¶0051)

an external control interface (i.e. CAV [408] is coupled to, MAM [411], TDM [412], Source [416], RAM [418] and external agent CAM [406])

a microcontroller (i.e. a microcontroller built-in the system processor [414]) **coupled between the system processor and to the tuner** (i.e. tuner(s) [410])

With respect to the video tuner claim 18, as discussed above since the apparatus disclosed by Klauss anticipated every structural element and its function of system processor as combination of function of CPU and a graphics controller required by an apparatus claim 1 and since this video tuner in claim 18 merely repeats the same scope of claim 1, claim 18 must also be anticipated by Klauss (see claim 1 rejection).

Regarding to claim 19: With respect to the video tuner claim 19, as discussed above since the apparatus disclosed by Klauss anticipated every structural element and its function required by an apparatus claim 2 and since this video tuner in claim 19 merely repeats the same scope of claim 2, claim 19 must also be anticipated by Klauss (see claim 2 rejection).

Regarding to claim 20: With respect to the video tuner claim 20, as discussed above since the apparatus disclosed by Klauss anticipated every structural element and its function required by an apparatus claim 3 and since this video tuner in claim 20 merely repeats the same scope of claim 3, claim 20 must also be anticipated by Klauss (see claim 3 rejection).

Regarding to claim 21: With respect to the video tuner claim 21, as discussed above since the apparatus disclosed by Klauss anticipated every structural element and its function required by an apparatus claim 4 and since this video tuner in claim 21 merely repeats the same scope of claim 4, claim 20 must also be anticipated by Klauss (see claim 4 rejection).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 6, 11, 16 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Klauss**, in view of US Patent No **6,772,434 to Godwin**

Regarding to claim 6: The apparatus of claim 1, Klauss fails to disclose the feature of claim "a look-up table for the tuner wherein the microprocessor converts the external tuner commands by applying the commands in the **third** protocol to the look-up table".

In an analogous art directed toward a similar problem namely improving the results from a look-up table for the tuner . Fig. 3A of Godwin shows a data stream and Fig. 3B shows a data package as **a look-up table** (Godwin, col.5 lines 13-52) **for the tuner** (col. 4 line 61 to col.5 line 5). Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to modify an apparatus of Klauss, with a data stream and a data packet for tuner as Godwin's disclosure; in order to provide a system for an integrated presentation of the media programs from primary service providers and secondary service providers, and an integrated technique for managing conditional access to the programs provided by different service providers.

Regarding to claim 11 and 16: With respect to the method claim 11 and 16, as discussed above since the apparatus disclosed every structural element and its function required by apparatus claim 6 and since this method in claim 11 and 16 merely repeat the limitation of claim 6, claim 11 and 16 have the same ground rejection as claim 6.

Regarding to claim 22: With respect to the method claim 22, as discussed above since the video tuner disclosed every structural element and its function required by apparatus claim 6 and since this method in claim 22 merely repeat the limitation of claim 6, claim 22 have the same ground rejection as claim 6.

7. **Claims 7, 12, 17 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Klauss**, in view of **US Pub. 2003/0194968** by **Young**.

Regarding to claim 7: Klauss teaches all features of apparatus in claim 1, but Klauss is unclear regarding to "an instruction stack specific for the tuner and wherein the

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microcontroller converts the external tuner commands by applying instructions from the tuner-specific instruction stack”.

In an analogous art directed toward a similar problem namely improving the results from an instruction stack specific for the tuner. Young teaches **an instruction stack** (as “stream using RTP/RTSP protocol”...**specific for the tuner**), (see ¶0074 lines 1-6) and (Fig. 2b block 252, Fig.6c block 251) **and wherein the microcontroller converts the external tuner commands by applying instructions from the tuner-specific instruction stack** (Young, ¶0073-¶0074)]. Therefore, it would have been obvious to a person having an ordinary skill in the art at the time of the invention was made to modify an apparatus of Klauss with an instruction stack specific for the tuner as taught by Young to install and configure due to the fact that each device must be equipped with a proprietary interface for communicating to other devices on the network. (¶0009)

Regarding to claim 12 and 17: With respect to the method claim 12 and 17, as discussed above since the apparatus disclosed by Klauss anticipated every structural element and its function required by apparatus claim 7 in view of Young and since this method in claim 12 and 17 merely repeat the limitation of claim 7, claim 12 and 17 have the same ground rejection as claim 7.

Regarding to claim 23 With respect to the video tuner claim 23, as discussed above since the apparatus disclosed by Klauss and Young anticipated every structural element and its function required by an apparatus claim 7 and since this video tuner in claim 23 merely repeats the same scope of claim 7, claim 23 must also be anticipated by Klauss and Young (see claim 7 rejection).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALAN LUONG whose telephone number is (571)270-5091. The examiner can normally be reached on Mon.-Thurs., 8:00am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Beliveau can be reached on (571) 272-7343. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ALAN LUONG/
Examiner, Art Unit 2427

/Scott Beliveau/
Supervisory Patent Examiner, Art Unit 2427